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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/898,385

07/05/2001

David Paul Jones

ESM00-003

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7590

03/24/2005

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EXAMINER

RUDE, TIMOTHY L

ART UNIT

PAPER NUMBER

2883

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H:A

**Office Action Summary**

Application No.

09/898,385

Applicant(s)

JONES ET AL.

Examiner

Timothy L. Rude

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,24 and 26-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,24 and 26-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/>Paper No(s)/Mail Date _____</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/>Paper No(s)/Mail Date. _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p> |
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## **DETAILED ACTION**

### ***Claims and Claim Objections***

1. Claims 1, 26-28, and 30 are amended. Claim 25 is canceled.

Claim 1 is objected to because of the following informalities: Claim 1 is not treated by Applicant as a true "consisting of" format claim. Applicant treats claim 1 as a - - comprising - - type format claim. For examination purposes claim 1 will be considered to comprise the claimed structure. Appropriate correction is required.

Claims 26-28 and 30 objected to because of the following informalities: The use of "either" is improper because more than two alternatives are present. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

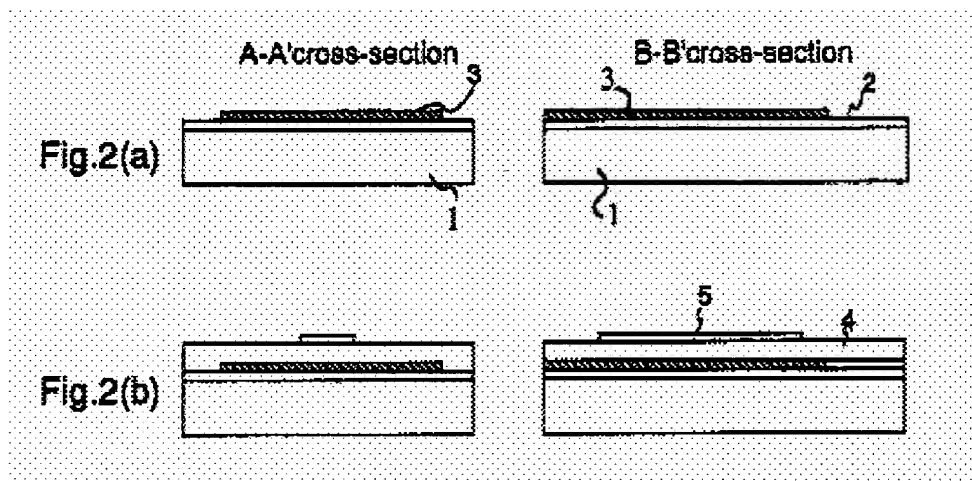
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, and 24-30 are rejected under 35 U.S.C. 102(e) as being Anticipated by Sera USPAT 6,559,913 B1.

As to claim 1, Sera discloses in Example 1, Figures 1-2f, (col. 6 line 15, through col. 8, line 29 and col. 4, line 34 through col. 6, line 14) an optical element consisting of a transparent insulating substrate, 1; a gate line, 7 (Applicant's circuitry layer), on the insulating substrate; and an underneath light-shielding film, 3 (Applicant's opaque optical shielding layer) (col. 6, lines 30-40), disposed to lie between the insulating substrate layer and the circuitry layer (per Figures 2a-2f).



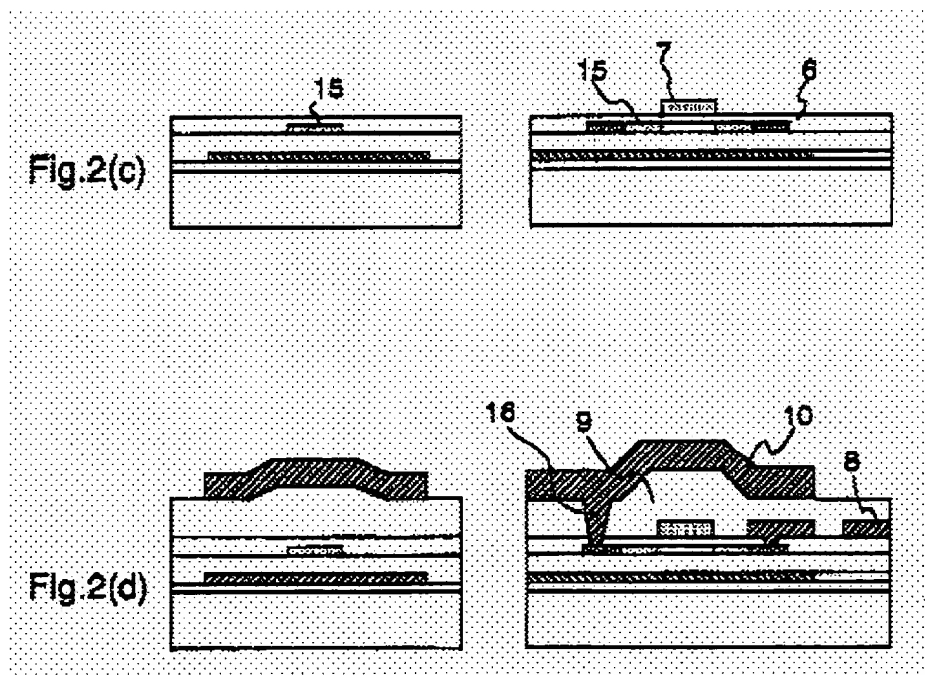
Sera discloses the circuitry layer includes an active polysilicon layer, 5, (col. 7, lines 1-11) Sera discloses a shielding layer, 3, is between the insulating substrate, 1, and the active polysilicon layer, 5, (per Figures 2a and 2b).

Sera discloses the optical element is part of a liquid crystal display and the opaque shielding layer also functions as a light shielding film (Applicant's black matrix) for said display (col. 6, lines 30-40).

Sera discloses the circuitry layer [stack of layers corresponding to Applicant's circuitry layer, 30, in Figure 3, per Applicant's specification, page 2, next to last paragraph] also includes additional layers that block light. However, Sera discloses no light blocking layers above said circuitry layer.

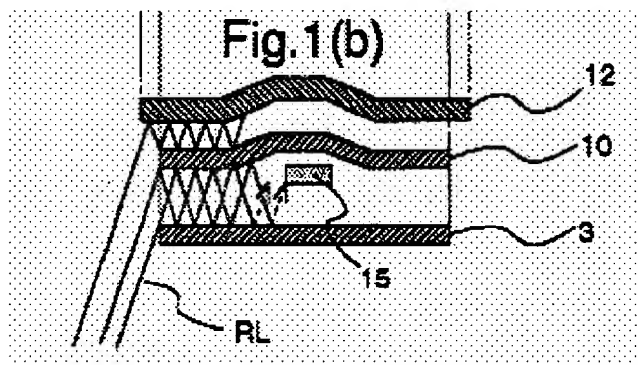
Please note that light may not leak between adjacent pixels of Sera in the region where light shielding layer, 3, is present. Please also note that claim 1 is not treated by Applicant as a true "consisting of" format claim, since Applicant modifies the claimed structure with dependent claims, however, examination was possible.

As to claim 3, Sera discloses the optical element of claims 1 and 2 wherein the shielding layer comprises Tungsten Silicide (WSi), (col. 6, lines 30-40) because it must withstand the temperature of annealing the polysilicon formation in a later step (Applicant's material that is unaffected by exposure to temperatures up to 1,100 °C).

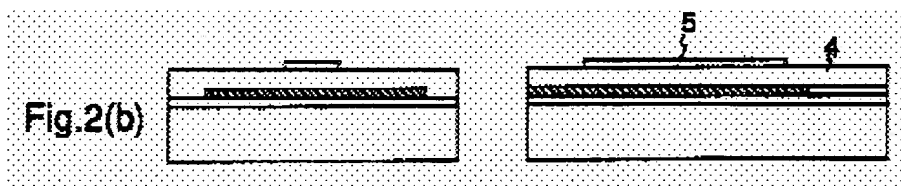


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As to claim 24, Sera discloses the optical element of claim 1, wherein the optical shielding layer, 3, is comprised of a light reflective material as illustrated in Figure 1(b). Please note that the disclosed material of Sera is WSi that has a lower reflectance than Al (col. 5, lines 9-16) and is therefore also an absorptive material (also reads on non-elected species, claim 25).



As to claims 26 and 27, Sera discloses in Figure 2(b) the optical element of claim 1, wherein the optical shielding layer is comprised of tungsten (WSi, Applicant's refractory metal) completely covered by itself (WSi, Applicant's encapsulated in a suitable barrier layer), (col. 6, lines 30-62). Please note that comprising format allows a solid material consisting of WSi to read on a claimed structure comprising W encapsulated in WSi.



As to claim 28, Sera discloses the optical element of claim 26, wherein the barrier layer comprises tungsten silicide (col. 5, lines 58-59 and col. 6, lines 30-50).

As to claim 29 and 30, Sera discloses the optical element of claim 26, further comprising a first interlayer film, 4 (Applicant's cap) over said barrier layer comprising silicon oxide (col. 6, lines 51-62).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

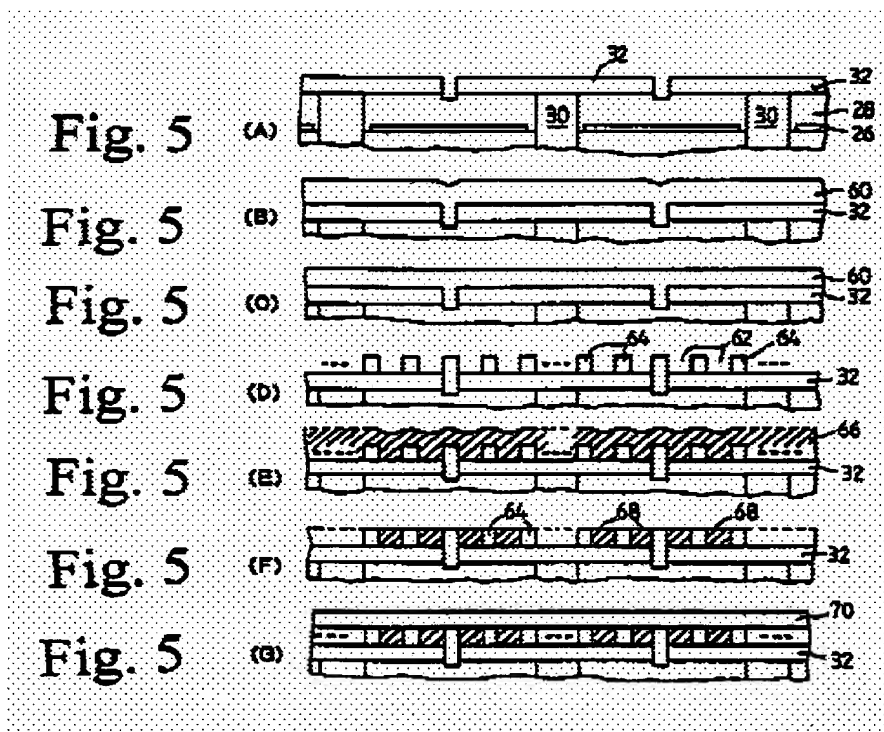
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3. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sera in view of Shinohara et al (Shinohara) USPAT 6,292,246 B1.

As to claims 31 and 32, Sera discloses the optical element of claim 26.

Sera does not explicitly disclose an element further comprising an adhesive layer disposed between the refractory metal and the transparent insulating substrate, wherein the adhesive is comprised of a titanium/titanium nitride laminate.

Shinohara teaches in Figures 5(a)-5(g) the use of an adhesive layer disposed between tungsten (Applicant's refractory metal) and the transparent insulating substrate, wherein the adhesive is comprised of a titanium/titanium nitride laminate under a layer comprising tungsten to provide improved adhesion to the underlying silicon dioxide layer (col. 5, lines 36-50).





Shinohara is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add an adhesive layer disposed between the refractory metal and the transparent insulating substrate, wherein the adhesive is comprised of a titanium/titanium nitride laminate under a layer comprising tungsten to provide improved adhesion to the underlying silicon dioxide layer.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Sera with an adhesive layer disposed between the refractory metal and the transparent insulating substrate, wherein the adhesive is comprised of a titanium/titanium nitride laminate under a layer comprising tungsten to provide improved adhesion to the underlying silicon dioxide layer.

References cited but not applied are relevant to the instant Application.

### ***Response to Arguments***

Applicant's arguments filed on 05 January 2005 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are as follows:

- (1) The presence of black matrix, 12, is contrary to claim 1.
- (2) Dependent claims are allowable since claim 1 is allowable.

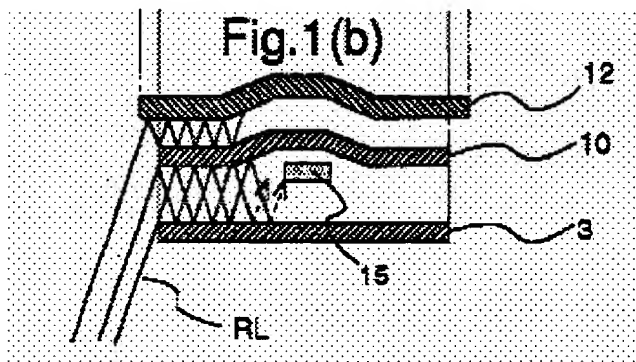
Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that Sera discloses the circuitry layer [stack of layers corresponding to Applicant's circuitry layer, 30, in Figure 3, per Applicant's specification, page 2, next to last paragraph] also includes additional layers 10 and 12 that block (reflect and/or absorb) light. However, Sera discloses no shield above said circuitry layer that functions to block the incident light from leaking between adjacent pixels.

Please note that dependent claims are presently in comprising type format.

Please also note that negative limitations require particular support in the specification (e.g., presented as essential as opposed to optional), and negative limitations are often readily rejected under 35 U.S.C. 103(a).

In the interest of compact prosecution, Examiner respectfully recommends Applicant consider pursuit of an alternate approach to overcome applied Sera rather than merely correct the present ambiguity of claim language regarding Applicant's use of a single light blocking layer.



(2) It is respectfully pointed out that in so far as Applicant has not argued rationale for rejection of dependent claims Applicant has acquiesced said rationale.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L. Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



tlr



Timothy L Rude  
Examiner  
Art Unit 2883